

REMARKS

The Office Action dated September 22, 2004 presents the examination of claims 1 and 3-9. No amendments are made and no new matter has been added to the present application.

Rejection under 35 U.S.C. § 102(b)

The Examiner maintains the rejection of claim 7 under 35 U.S.C. § 102(b) for allegedly being anticipated by EP 0 880 894 (hereinafter EP '894). Applicants respectfully traverse. Reconsideration and withdrawal of the instant rejection are respectfully requested.

The Examiner asserts that the composition claimed in claim 7 is identical to the antibacterial composition disclosed in EP '894. Applicants respectfully disagree. The composition of claim 7 comprises the antibacterial substance according to claim 1. This antibacterial substance inhibits, as described on page 8, lines 8-10 of the specification, germination of spores from spore-forming bacteria and koji mold so that the proliferation of these microbes is suppressed. EP '894 discloses a selective bactericide against food-borne pathogenic bacteria. However, EP '894 fails to disclose an antibacterial substance which inhibits the germination of spores

from spore-forming bacteria.

Thus, EP '894 fails to anticipate the present invention. Withdrawal of the instant rejection is therefore respectfully requested.

Rejection under 35 U.S.C. § 103(a)

The Examiner maintains the rejection of claims 1 and 3-9 under 35 U.S.C. § 103(a) for allegedly being obvious over WO 01/07135 (hereinafter WO '135) or U.S. Patent No. 6,063,382 (hereinafter USP '382), in view of Sakai et al. (1990). Applicants respectfully traverse. Reconsideration and withdrawal of the instant rejection are respectfully requested.

As mentioned above, the method of the present invention provides a method for production of an antibacterial substance that inhibits germination of spores from spore-forming bacteria. Due to this effect, it is possible to suppress the proliferation of spore forming bacteria and koji mold, as described on page 8, lines 8-10 of the present specification.

WO '135 or US '382 discloses the solvent extraction method. It is known that the solvent extraction can disintegrate plant cells and extract the content of plant cells.

However, in the method of the present invention, the tissue of

the plant is disintegrated with an enzyme capable of acting on protopectin. Protopectin constitutes middle lamellae and connects plant cells in the plant tissue. As described on page 2, line 20 to page 3, line 12 of the specification, action of the above enzyme on plant tissue causes the isolation of cells, i.e. those cells become single cells, but are not disintegrated. Therefore, by the method of the present invention, plant cells are not disintegrated, but respective cells are isolated into single cells and substances contained in middle lamellae (between plant cells) are solubilized together with pectins (see page 3, lines 15-22). Thus, the mechanism of production of the antibacterial substance of the present invention is totally different from that of WO '135 or US '382.

Moreover, isolation of plant cells into single cells and obtaining substances between plant cells are not disclosed or suggested in WO '135 or US '382. Sakai et al. (the present inventor) discloses that protopectinase catalyzes the release of pectin from protopectin. This article does not disclose or suggest an antibacterial substance or the presence of the same between plant cells.

Therefore, the present invention is not obvious over the combination of WO '135 or US '382 with Sakai et al. Withdrawal of

the instant rejection is therefore respectfully requested.

Declaration under 37 C.F.R. § 1.132

In the outstanding Office Action, the Examiner asserts that the results presented in the Declaration filed on July 29, 2004 are neither unexpected nor superior. Applicants respectfully submit that the Examiner's characterization of the results demonstrated in the Declaration are incorrect. In the experiment of the Declaration, spores and cells of *B. subtilis* are separately treated with sample (A) (or with sample (B)), and thereafter, the number of germinated spores and the number of grown cells are separately counted.

By comparing the numbers of spores germinated from spores treated with sample (A) and with sample (B), it is obvious that spores treated with sample (A) have a lower number of germinated spores than those treated with sample (B). Thus, it is concluded that sample (A), i.e. the composition obtained by the method of the present invention, has a superior effect on the inhibition of germination of spores from spore forming bacteria. Therefore, the results of the Declaration are superior and unexpected.

The Examiner also asserts that it is not clear that the method used in the Declaration is the same as that disclosed in the

specification. The method of sample preparation is described on page 4 of the declaration. Specifically, the method described in the declaration is: the chopped plant is suspended in the buffer. The enzyme (protopectinase) is added thereto and the mixture is reacted at 37°C for several hours. Thereafter, the resulting mixture is centrifuged and the obtained supernatant is used as the sample (A). This method is the same as the method described on page 10, lines 1-13 of the specification.

Conclusion

Applicants respectfully submit that the above remarks fully address and overcome the outstanding rejections. For the foregoing reasons, Applicants respectfully request the Examiner to withdraw all of the outstanding rejections and objections, and to issue a Notice of Allowance indicating the patentability of the present claims. Early and favorable action of the merits of the present application is thereby respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Kristi L. Rupert, Ph.D. (Reg. No. 45,702) at the telephone number of the undersigned below, to conduct an


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interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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